II. HORIZONTAL REGENERATORS

Horizontal regenerators have a bad reputation. There is nothing surprising in this, because in the design of this type of regenerator there is displayed a gross disregard of the rules governing the subdivision of gaseous currents. Take, for example,

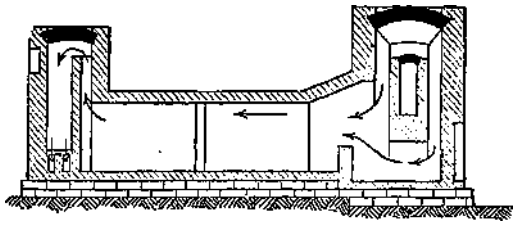

FIG. 54.

the regenerators of the celebrated furnaces designed by H. H. Campbell, which could not be forced to work well (Fig. 54).

In these regenerators the hot gases enter and pass out of the upper part of the chamber. It is evident that in this checker chamber the gases flow in an inverted channel and, if the depth of the flowing stream is less than the distance from the arch to the bottom of the chamber, they will not touch the latter.

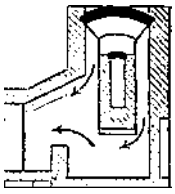

FIG. 55.

Note by English translator.—It may very readily happen that the conductive area of the checkerwork will be sufficient to cause the lower portion of the checker to reach a high temperature; but at the same time the frictional resistance to the flow of the gases and air will usually be so great that this design of checker will not work without forced draft. Horizontal recuperators are subject to this same defect and it is difficult to secure good results unless the passages are very short.